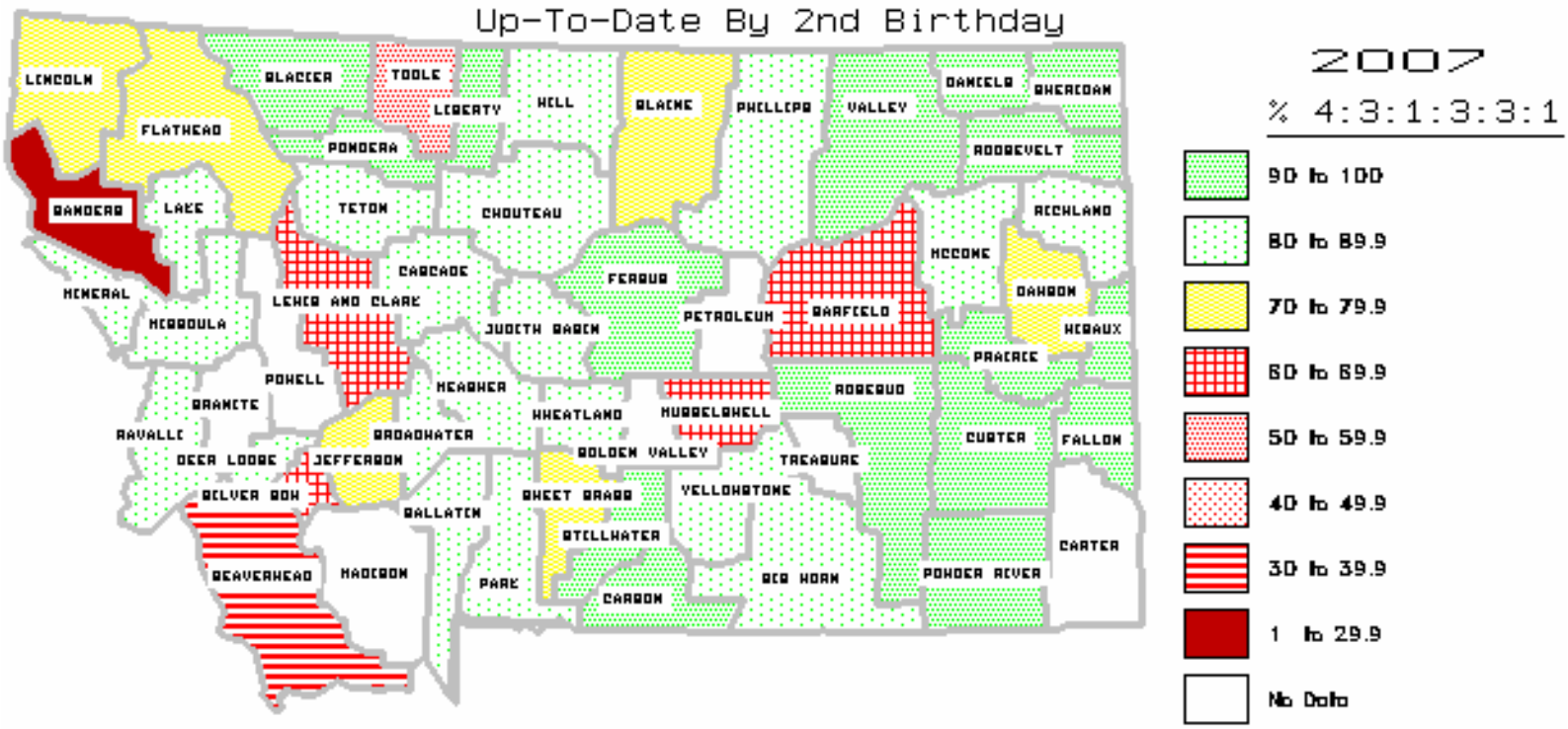
Montana's Immune Response Assessment/Spring Edition April 2008

Vol. 14 – No. 1



4DTaP: 3Polio: 1MMR: 3Hib: 3HepB: 1Varicella

STATEWIDE / COUNTYWIDE COVERAGE

Note: For various reasons data is not available for those counties portrayed in white on the above map. The county may not have had a vaccine provider or may lack children in the 24 – 35 months of age cohort. Also, due to staff shortage within the State Immunization Program, for the year 2007, some counties did not undergo an assessment.

Completed countywide vaccination coverage of children aged 24 through 35 months, as of April 1, 2007, and assessed for completion by the second birthday for the tandem vaccine series ***4DTaP: 3Polio: 1MMR: 3Hib: 3HepB: 1Varicella*** (displayed on the state map above), represents an averaged percentage of all vaccination provider data for any given county. The 2,855 children seen by providers represent 30.74% of the state's birth cohort for the time frame assessed. Aggregation of all county data reveals an averaged statewide provider-based coverage, for the serial combination of 81.2%.

Fourth from Last

As published by CDC, at http://www.cdc.gov/vaccines/stats-surv/nis/tables/0607/tab02_antigen_iap.xls, and according to estimated vaccination coverage levels, among children aged 19-35 months, for the 4:3:1:3:3:1 series as assessed by the National Immunization Survey (NIS), Montana ranks nationally, fourth from last, at 68.2 ± 6%. Why? See next page.

Why are we fourth from last?

To answer this question let us examine the NIS data in a bit more detail. Here are some specifics compiled from the website, referenced above, for children 19 – 35 months of age:

	4DTaP	**3**Polio	**1**MMR	**3**Hib	**3**HepB	**1**Varicella	Total
Single Antigen Rates %	77.6	89.2	90.6	90.3	91.8	81.8	**68.2**
Tandem Serial Combination Rates in %						4:3:1	76.1
						4:3:1:3	75.8
						4:3:1:3:3	74.9

- **Problem 1: The difficulty of series complete goals.** Although single antigens may score high on completion rates, random gaps in serial coverage quickly lead to substantial declines in vaccination. As an extreme example, imagine 6 children assessed for completion of 4:3:1:3:3:1 and each child is missing one different antigen from the series. Single antigen coverage is 83.3% for each member of the series yet the series completion rate is ZERO. Each antigen, in the series, that factors less than 100%, diminishes the completion rate of the series. By comparison with NIS data for the previous year, a precipitous drop in coverage has been noted: ***DTaP4*** (-8.0), ***Polio3*** (-6.1), ***MMR1*** (-3.0), ***Hib3*** (-1.8), ***HepB3*** rose slightly (+0.08).Varicella coverage increased (+6.3). Almost 4,000 children, in Montana, have not received the full recommended series.

- **Problem 2: Drop Out Rate.** Failure of a child to receive all recommended doses of a particular vaccine in a timely manner can be seen by reviewing the drop-out rates. The low coverage level for the fourth DTaP vaccine reflects a drop-out rate of -18.8% from DTaP3. Although, coverage of 92.7% is not bad for DTaP3 this rate is not achieved until children are 24 months of age (NIS). All children should have received the third dose of DTaP in the sixth month of life yet; the rate of administration by the end of the sixth month is 68.1%. Montana's birth cohort of 2-year-olds is ~11,430. At 7 months 3,647 remain vulnerable to diphtheria, tetanus or pertussis. Twenty four month coverage hardly gives a better review having 2,983 children without fourth dose protection. The low coverage level seen for the fourth DTaP vaccine likely reflects missed opportunities to vaccinate when children return to the practice during their second year of life and may also indicate lack of a successful patient tracking system.

- **Problem 3: Varicella.** Recommendations for routine varicella vaccination were published by the American Academy of Pediatrics back in **May of 1995** yet after 13 years, in Montana, many eligible children remain unimmunized. Why? One and perhaps the only conclusion to be reached is that **false barriers** to varicella immunization have yet to be breached in our state. Potential barriers to achieving high rates of varicella immunization among children include the following:
  1) **The misconception that varicella is uniformly a mild disease:** *for those who believe this, we recommend reading an article on invasive group A streptococcal (GAS) disease in the electronic May issue of Pediatrics 105 [5]:60, 2000. According to the article, 15% of invasive group A streptococcal disease in a pediatric population is due to varicella and the overall case-fatality rate is 4%. Prior to vaccine introduction, during 1990-1994, varicella was the underlying cause of death in an average of 43 children aged <15 years each year. During 1988-1995, up to 10,000 children were hospitalized each year for varicella or its complications (CDC, unpublished data, 1998). Ninety percent of the children who died did not have high-risk conditions for severe varicella. The most common severe complications from varicella among fatal cases in children are secondary bacterial infections and pneumonia. Other complications include encephalitis, hemorrhagic complications, hepatitis, arthritis, and Reye syndrome. Reports of severe invasive infections from GAS-complicating varicella have heightened awareness that varicella is a well-defined risk factor for GAS disease. JAMA* 1998; 279:1773-1774. Continue, next page.

2) **Concern that universal immunization of young children will shift the disease burden to older age groups among whom the disease is more severe:** *Concern that use of varicella vaccine in young children will create a cohort of adults at risk for serious varicella disease is now a moot point. Prior to 1995, fewer than 2% of adults older than 30 years in the United States were susceptible to varicella. The use of varicella vaccine has diminished the circulation of wild-type virus. The likelihood that unimmunized children are not exposed to natural infection and are entering adolescence and adulthood without immunity is increasing. Mathematical models predict that if varicella vaccine coverage in children is more than 90%, a greater proportion of cases will occur at older ages, but the incidence of varicella will decrease for children and adults. However, if immunization rates for young children with varicella vaccine remain relatively low, the number of children who become susceptible adults will increase as will the opportunities for these susceptible adults to contract varicella.* ***Therefore, those health-care personnel who withhold varicella immunization from children and adolescents may be creating a cohort of adults at risk for serious varicella disease.*** In 2000, a healthy 37 year-old male died in Montana from varicella after providing care to a child with varicella.
3) **Natural infection is better than immunization:** It is true that natural infection almost always causes better immunity than vaccines. Whereas immunity from disease often follows a single natural infection, immunity from vaccines usually occurs only after several doses. However, the difference between vaccination and natural infection is the price paid for immunity. The price paid for immunity after natural varicella infection might be any of the complications listed above. Put simply, the price of disease is too high. In 1999, a Montana child died due to chickenpox.
4) **Possibility of Shingles after varicella vaccination:** Zoster in vaccinated persons has been reported, but is rare. Not all of these cases have been confirmed as having been caused by vaccine virus. The risk of Zoster following vaccination appears to be less than that following infection with wild-type virus. However, longer follow-up is needed to assess this risk over time.

Do You Want to Know How Your Clinic Rates?

Well now you can with the help of The Centers for Disease Control and Prevention (CDC)'s Comprehensive Clinic Assessment Software Application (CoCASA), which can be downloaded from their website. Information can be entered into CoCASA manually or exported from Montana's Immunization Information System (IIS) WIZRD and electronically imported into CoCASA.

CoCASA is designed to assess immunizations practices within a clinic and analyze the data to assist in pinpointing a clinic's strengths and areas of improvement. CoCASA can generate reports including immunization coverage level, missed opportunities for simultaneous immunization, and lists of children who are missing immunizations or have invalid doses. CoCASA can be found at http://www.cdc.gov/vaccines/programs/cocasa/default.htm.

For instructions on exporting clinic data from WIZRD or assistance with CoCASA, please contact the Immunization Program at 444-5580.

Clarification of Varicella Vaccine Requirement

Please remember that children older than 19 months of age and born after January 2005 are required to receive a dose of varicella vaccine to continue daycare attendance. This requirement was finalized in September of 2006 in ARM 37.95.140(1). The dose of varicella vaccine must be given on or after 12 months. Children who have a history of varicella disease can be exempted from the vaccine requirement with form DPHHS-115 "Documentation of History of Varicella (Chickenpox) Disease for Child Attending Daycare" is posted on the Immunization Program Website. The number of children who are infected with chickenpox prior to 19 months should be a small number and should continue to get smaller. We consider daycare aged children who have chickenpox cases a failure to vaccinate.

HIB WILL CONTINUE TO BE SHIPPED

As most of you know, the United States is currently experiencing a shortage of Hib Vaccine, due to the temporary withdrawal of Merck's Pedvax Hib and Comvax from the market. There is still a supply of Sanofi's ActHib available. Each month Montana will receive an allocation of Pedvax Hib from the pediatric stockpile and ActHib to be distributed to Montana VFC providers. Until the shortage has ended, the Montana Immunization Program will allocate Hib doses to all providers based on average monthly usage and current inventory as reported on the Monthly Doses Administered Report. We need your reports by the 5th of each month so we can allocate vaccine. During this time you will not need to order Hib as we will order it on your behalf. Thank you for your continued patience.

LONG TERM CARE - IMMUNIZATION

Immunization rates for influenza and pneumococcal among residents in Montana's Long-Term Care (LTC) facilities has dropped from last years results. As of February 21 our immunization rates according to the self reported surveys were 86% for influenza among residents as compared to 89% last year, 74% PPV23 compared to 77% in 2006. This year the influenza immunization rate among staff stayed the same as last year's rate of 61%. It is still not too late for the LTC facilities in your county to turn in their surveys. They have until April 15th to turn the surveys back into the Immunization Program.

Please welcome our two newest team players to the Immunization Program.

Nancy Demoro

Nancy is the Perinatal Hepatitis B Coordinator, Nurse Consultant. She worked her way to Montana from California, San Francisco area, where she worked most of her career as a psychiatric nurse. She arrived in MT December of 1996 towing a trailer accompanied by a dog & cat. This was a Baptism by fire about winter driving. Nancy worked 10 years as PHN and director of Public Health in Roosevelt County. You may email Nancy at ndemoro@mt.gov

Judith Gedrose

Judith is the Adolescent Coordinator, Nurse Consultant. She taught Nursing at Carroll College for the past 12 years. For 15 years prior to teaching at Carroll, she served as a Nurse Consultant/ Epidemiologist in the former Department of Health and Environmental Sciences. You may email Judith at jgedrose@mt.gov

New Immunization Program Website address:

immunization.mt.gov

CDC Home | Search | Health Topics A-Z

MMWR

Weekly

March 28, 2008 / 57(12);319

Recommended Immunization Schedules for Persons Aged 0--18 Years --- United States, 2008

Please note: An erratum has been noted at the end of this article.

The recommended immunization schedules for persons aged 0--18 years and the catch-up immunization schedule for 2008 have been approved by the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians. The standard *MMWR* footnote format has been modified for publication of this schedule.

Suggested citation: Centers for Disease Control and Prevention. Recommended immunization schedules for persons aged 0--18 years---United States, 2008. MMWR 2007; 56(51&52):Q1--Q4.

The Advisory Committee on Immunization Practices (ACIP) annually publishes a recommended immunization schedule for persons aged 0--18 years to reflect changes in vaccine formulations and current recommendations for the use of licensed vaccines. Changes to the previous schedule (*1*) are as follows:

- The pneumococcal conjugate vaccine (PCV) footnote reflects updated recommendations for incompletely vaccinated children aged 24--59 months, including those with underlying medical conditions (*2*).

- Recommendations for use of the live attenuated influenza vaccine (LAIV) now include healthy children aged as young as 2 years. LAIV should not be administered to children aged <5 years with recurrent wheezing (*3*). Children aged <9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time last season, but only received 1 dose, should have 2 doses of vaccine, at least 4 weeks apart. Other updates are included (*4*).

- For meningococcal vaccines, changes affect certain children aged 2--10 years (*5*). Vaccinating with meningococcal conjugate vaccine (MCV4) is preferred to meningococcal polysaccharide vaccine (MPSV4) for children at increased risk for meningococcal disease, including children who are traveling to or residents of countries in which the disease is hyperendemic or epidemic, children who have terminal complement component deficiencies, and children who have anatomic or functional asplenia. The catch-up schedule for youths aged 13--18 years has been updated. MPSV4 is an acceptable alternative for short-term (i.e., 3--5 years) protection against meningococcal disease for persons aged 2--18 years (*6*).

- The tetanus and diphtheria toxoids/tetanus and diphtheria toxoids and acellular pertussis vaccine (Td/Tdap) catch-up schedule for persons aged 7--18 years who received their first dose before age 12 months now indicates that these youths should receive 4 doses, with at least 4 weeks (not 8 weeks) between doses 2 and 3.

- The catch-up bars for hepatitis B and *Haemophilus influenzae* type b conjugate vaccine have been deleted on the routine schedule for persons aged 0--6 years (Figure 1). The figure title refers users to the catch-up schedule (Table) for patients who fall behind or start late with vaccinations.

The National Childhood Vaccine Injury Act requires that health-care providers provide parents or patients with copies of Vaccine Information Statements before administering each dose of the vaccines listed in the schedule. Additional information is available from state health departments and from CDC at http://www.cdc.gov/vaccines/pubs/vis/default.htm.

Detailed recommendations for using vaccines are available from package inserts, ACIP statements (available at http://www.cdc.gov/vaccines/pubs/acip-list.htm), and the *2006 Red Book* (*7*). Guidance regarding the Vaccine Adverse Event Reporting System form is available at http://www.vaers.hhs.gov or by telephone, 800-822-7967. Continue next page.

References

1. CDC. Recommended childhood and adolescent immunization schedule---United States. MMWR 2007;55(51&52):Q1--Q4.
2. CDC. Revised recommendations of the Advisory Committee on Immunization Practices (ACIP) for the prevention of pneumococcal disease. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. Available at http://www.cdc.gov/vaccines/recs/acip/downloads/min_oct07.pdf
3. CDC. Expansion of use of live attenuated influenza vaccine (FluMist®) to children aged 2--4 years and other FluMist changes for the 2007--08 influenza season. MMWR 2007;56:1217--9.
4. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2007;56(No. RR-6).
5. CDC. Recommendation from the Advisory Committee on Immunization Practices (ACIP) for use of quadrivalent meningococcal conjugate vaccine (MCV4) in children aged 2--10 years at increased risk for invasive meningococcal disease. MMWR 2007;56:1265--6.
6. CDC. Revised recommendations of the Advisory Committee on Immunization Practices (ACIP) to vaccinate all persons aged 11--18 years with meningococcal conjugate vaccine. MMWR 2007;56:794--5.
7. American Academy of Pediatrics. Active and passive immunization. In: Pickering LK, ed. 2006 red book: report of the Committee on Infectious Diseases. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006.

Errata: Vol 57, No. 1
In "Recommended Immunization Schedules for Persons Aged 0--18 Years---United States, 2008," errors occurred. On page Q-2, under Figure 1, in footnote 4, *Haemophilus influenzae* type b conjugate vaccine (Hib), the second bullet should read: TriHiBit® (DTaP/Hib) combination products should not be used for primary immunization but can be used as boosters after any Hib vaccine in children aged ≥12 months. On page Q-4, in the lower section of the Table titled, Catch-up schedule for persons aged 7--18 years, in row Human Papillomavirus, under column heading Dose 2 to Dose 3, the text should read: 12 weeks **(and 24 weeks after the first dose)**

Opinion: Inoculated Against Facts, By Paul A. Offit, *New York Times*, March 31, 2008

ON March 6, Terry and Jon Poling stood outside a federal courthouse in Atlanta, Ga., with their 9-year-old daughter Hannah and announced that the federal government had admitted that vaccines had contributed to her autism. The news was shocking. Health officials at the Centers for Disease Control and Prevention and at the American Academy of Pediatrics have steadfastly assured the public that vaccines do not cause autism. Now, in a special vaccine claims court, the federal government appeared to have said exactly the opposite. What happened?

The answer is wrapped up in the nature of the unusual court where the Poling case was heard. In 1986, after a flood of lawsuits against vaccine makers threatened the manufacture of vaccines for children, Congress created the National Vaccine Injury Compensation Program, financed by a tax on every dose of vaccine.
As part of the program, a group of scientists, doctors and lawyers listed all the health problems that might be linked to vaccines. The oral polio vaccine could in rare cases cause paralysis, for example, and an early version of the rotavirus vaccine might cause intestinal blockage. (In the interest of full disclosure: I am a co-inventor and co-patent holder of a newer rotavirus vaccine.)

If, at a trial in a special court, a preponderance of scientific evidence suggested that a vaccine caused one of these problems, a family would be compensated quickly, generously and fairly. Because no one could sue vaccine makers without going through this special court, the number of lawsuits against vaccine makers fell drastically.
The system worked fine until a few years ago, when vaccine court judges turned their back on science by dropping preponderance of evidence as a standard. Now, petitioners need merely propose a biologically plausible mechanism by which a vaccine might cause harm — even if their explanation contradicts published studies. In 2006, for example, Dorothy Werderitsh claimed in the vaccine court that a hepatitis B vaccine had triggered an autoimmune response in her brain that led to multiple sclerosis. Two large studies had clearly shown that hepatitis B vaccine could neither cause nor exacerbate multiple sclerosis, but the court ruled in favor of Ms. Werderitsh, elevating a hypothesis above epidemiological evidence.

The Hannah Poling case is similar. In 2000, when Hannah was 19 months old, she received five shots against nine infectious diseases. Over the next several months, she developed symptoms of autism. Subsequent tests showed that Hannah has a mitochondrial disorder — her cells are unable to adequately process nutrients — and this contributed to her autism. An expert who testified in court on the Polings' behalf claimed that the five vaccines had stressed Hannah's already weakened cells, worsening her disorder. Without holding a hearing on the matter, the court conceded that the claim was biologically plausible.

On its face, the expert's opinion makes no sense. Even five vaccines at once would not place an unusually high burden on a child's immune system. The Institute of Medicine has found that multiple vaccines do not overwhelm or weaken the immune system. And although natural infections can worsen symptoms of chronic neurological illnesses in children, vaccines are not known to.

"There is no evidence that children with mitochondrial enzyme deficiencies are worsened by vaccines," Salvatore DiMauro, a professor of neurology at Columbia who is the nation's leading expert on the disorder, told me. Indeed, children like Hannah Poling who are especially susceptible to infections are most likely to benefit from vaccines. Supporters of the Vaccine Injury Compensation Program argue reasonably that the program should err on the side of overcompensation — a relief valve that is needed in a society that mandates vaccines. But there is a price for this largesse. In the past few years, parents of 4,800 autistic children have filed claims to the vaccine court which have yet to be heard. And average awards in other recent vaccine cases have been more than $800,000. Furthermore, because uncompensated claims in vaccine court can spill into state courts, the Poling decision will likely draw more personal-injury lawyers to the fray. "It's a beginning," said Kevin Conway, a Boston-based lawyer who represents more than 1,200 families with vaccine injury claims.

The vaccine court should return to the preponderance-of-evidence standard. But much damage has already been done by the Poling decision. Parents may now worry about vaccinating their children, more autism research money may be steered toward vaccines and away from more promising leads and, if similar awards are made in state courts, pharmaceutical companies may abandon vaccines for American children. In the name of trying to help children with autism, the Poling decision has only hurt them.

Paul A. Offit, chief of the infectious diseases division of the Children's Hospital of Philadelphia, is the author of "Vaccinated: One Man's Quest to Defeat the World's Deadliest Diseases."

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UPCOMING EVENTS

Spring Public Health Meeting
April 15 – 17, 2008
Holiday Inn
Downtown at the Park
Missoula, MT